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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/584,491

Applicant(s)

TUORINIEMI ET AL.

Examiner

KHOA HUYNH

Art Unit

2462

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 16 and 17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/ISD)
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date 07/21/2009

DETAILED ACTION

1. This Office Action is in response to the Applicants' amendment received on 07/21/2009.

Claim Status

2. Claims 1-9 have been amended.
3. Claims 10-17 are newly added.
4. Claims 1-17 are currently presenting for examination, with claims 1, 5, 7, 10 and 14, being independent.
5. This action has been made **FINAL**.

Response to Arguments

6. Applicant's arguments filed 07/21/2009 have been considered but are not persuasive and moot in view of the new ground(s) of rejection.
7. On page 18, applicants' representative states that prior art Karagiannis doesn't teach newly added limitation: "wherein no IP control plane signaling is used for transmitting the translated CARD information from the access router to the user terminal". Examiner respectfully disagrees. Karagiannis clearly teaches that agent advertisements is piggybacked onto lower layer protocol messages such as Layer 2 messages (Karagiannis, page 8, paragraph 88). Layer 2 messages are not IP control

plane signaling. Applicants' representative's argument concerning layer 2 protocol being able to interface or compatible with Mobile IPv4 is moot because the claim doesn't discuss compatibility with IP protocol, instead the claim only states "no IP control plane signaling is used for transmitting...". Karagiannis clearly teaches that Layer 2 messages are used for transmitting, not IP.

Claim Objections

8. Claims 1, 5, 7, 9 are objected to because of the following informalities:
9. For claim 1, it is unclear whether "an access router translating..." and "other access router..." belong to "the access routers" described in the preamble. The phrase "transmitting the translated CARD protocol information at least a layer 2 wireless service..." is also unclear.
10. For claim 5, it is unclear whether the user terminal listening to the translated version of the CARD protocol information or the non-translated version. Also the phrases "the broadcasted translated CARD layer 2 information" and "the translated CARD layer 2 information" are unclear because the word "the" is use on a first occurrence of such phrase. Also in claim 5, it is unclear who or what does the translation.
11. For claim 7, the phrase "the IP lane" is unclear because previously only "IP control plane" is discussed, not "IP lane".
12. For claim 9, the phrase "means for transmission and reception for understanding protocol extensions..." is unclear.

13. Appropriate correction is required.

Claim Rejections - 35 USC § 112

14. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

15. **Claims 7-9** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

16. Regarding claims 7-9, specifically independent claim 7, newly added limitation “where in no IP control plane signaling is present in the layer 2 translated CARD protocol information” is not supported by the specification. The original specification only states on page 7, lines 26-27, “It will be noted that no IP control plane signaling is used for transferring the translated CARD information to the user terminal”. As one of ordinary skills in the art can clearly see, the specification only provides support for “no IP control plane signaling is used for transferring...”. The specification is silent regarding “no IP control plane signaling is present in the layer 2 translated CARD protocol information”.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

19. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

20. **Claims 1-2, 10, 13** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaskar, US 2004/0196808 in view of Karagiannis, US 2003/0018810.

21. **For claim 1.** Chaskar teaches: A method of providing candidate access router capability discovery information (CARD information) to a user terminal (Chaskar, page 4, paragraph 39, router capability information is transmitted to mobile terminal) in a multi access system, the multi access system comprising one or more wireless networks each with a respective access technology (Chaskar, fig 1, multi access system with wireless network SA1 using MCI and SA2 using AT&T technology) and each wireless network comprising access routers each with associated access points(Chaskar, fig 1, access routers AR1 and AR2 are associated with access points BS1, BS2 respectively), the access routers exchanging CARD information by using a CARD protocol on an IP control plane (Chaskar, page 3, paragraph 34, AR1 and AR2 exchange CARD information over IP), said method comprising:

Chaskar doesn't teach: an access router translating the CARD protocol information of other access router received on the IP control plane into layer 2 information messages and transmitting the translated CARD protocol information at least a layer 2 wireless service to the user terminal, wherein no IP control plane signaling is used for transmitting the translated CARD information from the access router to the user terminal.

Karagiannis from the same or similar fields of endeavor teaches: an access router translating the CARD protocol information of other access router received on the

IP control plane into layer 2 information messages (Karagiannis, page 8, paragraph 88, agent advertisement information is solicited and is piggy-backed onto layer 2 messages) and transmitting the translated CARD protocol information at least a layer 2 wireless service to the user terminal (Karagiannis, page 8, paragraph 88, advertisement is transmitted using layer 2 protocol to the mobile node), wherein no IP control plane signaling is used for transmitting the translated CARD information from the access router to the user terminal (Karagiannis, page 8, paragraph 88, advertisement is transmitted using layer 2 protocol, not IP control plane signaling).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and transmit them over layer 2 protocol (Karagiannis, page 8, paragraph 88) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

22. **For claim 2.** Chaskar and Karagiannis disclose all the limitations of claim 1, and Chaskar further teaches: the access router broadcasting the translated CARD protocol information (Chaskar, page 1, paragraph 8, CARD information is broadcasted by AR2 in service area SA2),

Chaskar doesn't teach: wherein no IP control plane signaling is used for broadcasting the translated CARD information.

Karagiannis from the same or similar fields of endeavor teaches: wherein no IP control plane signaling is used for broadcasting the translated CARD information (Karagiannis, page 3, paragraph 48, agent advertisements are broadcasted; page 8, paragraph 88, advertisement is transmitted using layer 2 protocol, not IP control plane signaling).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and broadcast them over layer 2 protocol (Karagiannis, page 8, paragraph 88) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

23. **For claim 10.** Chaskar teaches: In a multi access system comprising plural access routers (Chaskar, fig 1, multi access system with access routers AR1, AR2), a method of providing router capability information to a user terminal, said router capability information comprising capability information of said plural access routers (Chaskar, page 4, paragraph 39, router capability information of plurality of routers are transmitted to mobile terminal), said method comprising:

an access router of said plural routers exchanging the capability information with others of said plural routers using messages based on IP control plane (Chaskar, page 3, paragraph 34, AR1 and AR2 exchange CARD information over IP);

Chaskar doesn't teach: said access router translating said IP control plane based router capability information into layer 2 based router capability information; said access router connecting with said user terminal using a layer 2 communication service; and said access router transmitting said layer 2 based router capability information to said user terminal over said layer 2 communication service, wherein no IP control plane is used in said layer 2 communication service between said access router and said user terminal.

Karagiannis from the same or similar fields of endeavor teaches: said access router translating said IP control plane based router capability information into layer 2 based router capability information (Karagiannis, page 8, paragraph 88, agent advertisement information is solicited and is piggy-backed onto layer 2 messages); said access router connecting with said user terminal using a layer 2 communication service; and said access router transmitting said layer 2 based router capability information to said user terminal over said layer 2 communication service (Karagiannis, page 8, paragraph 88, advertisement is transmitted from agent to mobile node using layer 2 protocol),

wherein no IP control plane is used in said layer 2 communication service between said access router and said user terminal (Karagiannis, page 8, paragraph 88, advertisement is transmitted using layer 2 protocol, not IP control plane signaling).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar, since Chaskar suggests a technique for providing router capability information to a user

terminal, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and transmit them over layer 2 protocol (Karagiannis, page 8, paragraph 88) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

24. **For claim 13.** Chaskar and Karagiannis disclose all the limitations of claim 10, however Chaskar fails to teach: said access router broadcasting said layer 2 based router capability information over a layer 2 broadcasting service, wherein no IP control plane is used in said layer 2 broadcasting service.

Karagiannis from the same or similar fields of endeavor teaches: said access router broadcasting said layer 2 based router capability information over a layer 2 broadcasting service, wherein no IP control plane is used in said layer 2 broadcasting service. (Karagiannis, page 3, paragraph 48, agent advertisements are broadcasted; page 8, paragraph 88, advertisement is transmitted using layer 2 protocol, not IP control plane signaling).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and broadcast them over layer 2 protocol (Karagiannis, page 8, paragraph 88) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

25. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaskar, US 2004/0196808 in view of Karagiannis, US 2003/0018810 and further in view of Kankaanpaa, "Candidate Access Router Discovery".

26. **For claim 3.** Chaskar and Karagiannis disclose all the limitations of claim 1, however Chaskar and Karagiannis fail to teach: wherein the access router is a current access router to which the user terminal currently is connected.

Kankaanpaa from the same or similar fields of endeavor teaches: wherein the access router is a current access router to which the user terminal currently is connected (Kankaanpaa, page 6, paragraph 1, the current access router AR sends capability information to the mobile node MN).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kankaanpaa into Chaskar and Karagiannis, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Kankaanpaa suggests the beneficial way of having the current access router doing such transmitting (Kankaanpaa, page 6, paragraph 1) improve battery power and processing capabilities of mobile node since the mobile node doesn't have to contact other candidate access routers directly in the analogous art of wireless discovery/handoff.

27. **Claims 4, 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Chaskar, US 2004/0196808 in view of Karagiannis, US 2003/0018810, and further in view of Krishnamurthi, US 2003/0174667

28. **For claim 4.** Chaskar and Karagiannis disclose all the limitations of claim 3, however Chaskar and Karagiannis fail to teach: the current access router transmitting said CARD information to the user terminal when there is a candidate access router that offers capabilities that suits the needs of the user terminal better than the current access router.

Krishnamurthi from the same or similar fields of endeavor teaches: the current access router transmitting said CARD information to the user terminal when there is a candidate access router that offers capabilities that suits the needs of the user terminal better than the current access router (Krishnamurthi, page 3, paragraph 27, MN 16 is notified by AR_current when there is an AR that better match its preferences)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Krishnamurthi into Chaskar and Karagiannis, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Krishnamurthi suggests the beneficial way of transmitting such information when there is a candidate access router that better match the preference of the user terminal (Krishnamurthi, page 3, paragraph 27) to improve compatibility and provide better services to the user in the analogous art of wireless discovery/handoff.

29. **For claim 12.** Chaskar and Karagiannis disclose all the limitations of claim 10, however Chaskar and Karagiannis fail to teach: said access router determining whether one or more of said other routers will better meet requirements of said user terminal than said access router; and said access router transmitting said layer 2 based router capability information of said one or more other routers determined to better meet said requirements of said user terminal.

Krishnamurthi from the same or similar fields of endeavor teaches: said access router determining whether one or more of said other routers will better meet requirements of said user terminal than said access router; and said access router transmitting said layer 2 based router capability information of said one or more other routers determined to better meet said requirements of said user terminal.

(Krishnamurthi, page 3, paragraph 27, MN 16 is notified by AR_current when there is an AR that better match its preferences; layer 2 based router capability information is already discussed as being taught by Karagiannis previously)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Krishnamurthi into Chaskar and Karagiannis, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Krishnamurthi suggests the beneficial way of transmitting such information when there is a candidate access router that better match the preference of the user terminal (Krishnamurthi, page 3, paragraph 27) to improve

compatibility and provide better services to the user in the analogous art of wireless discovery/handoff.

30. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaskar, US 2004/0196808 in view of Hsu, US 2004/0176024 and Karagiannis, US 2003/0018810.

31. **For claim 5.** Chaskar teaches: A method of providing candidate access router capability discovery information (CARD information) to a user terminal (Chaskar, page 4, paragraph 39, router capability information is transmitted to mobile terminal) in a multi access system, the multi access system comprising one or more wireless networks each with a respective access technology (Chaskar, fig 1, multi access system with wireless network SA1 using MCI and SA2 using AT&T technology) and each wireless network comprising access routers each with associated access points (Chaskar, fig 1, access routers AR1 and AR2 are associated with access points BS1, BS2 respectively), the access routers exchanging CARD information by using a CARD protocol on the IP control plane (Chaskar, page 3, paragraph 34, AR1 and AR2 exchange CARD information over IP), said method comprising:

the user terminal listening to the CARD protocol information of plural access routers of the multi access system..., the CARD protocol information being broadcasted by one or more routers of the multi access system (Chaskar, page 1, paragraph 8,

mobile terminal MT listens to CARD information broadcasted by AR2 in service area SA2);

the user terminal selecting a router among the plural access routers that best meet requirements of the user terminal based on the broadcasted CARD protocol information (Chaskar, page 3, paragraph 27, AR best meet the requirements of user is selected, page 4, paragraph 39, the selection could be done by the user terminal itself);

the user terminal establishing a wireless connection to said selected access router which then becomes a current access router (Chaskar, page 3, paragraph 30, handoff is performed, user terminal is connected to new AR);

Chaskar doesn't teach: and finally the user terminal deactivating listening for the broadcasted translated CARD layer 2 information after establishing the connection to the current access router and activating listening to the translated CARD layer 2 information transmitted from the current access router on the established wireless connection

Hsu from the same or similar fields of endeavor teaches: and finally the user terminal deactivating listening for the broadcasted CARD layer 2 information after establishing the connection to the current access router and activating listening to the CARD layer 2 information transmitted from the current access router on the established wireless connection (Hsu, page 3, paragraph 48, Bs broadcasts WLAN advertisements over cellular; Hsu, page 5, paragraph 65, MS stop listening for broadcasted advertisement, and tune to WLAN for information)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Hsu into Chaskar, since Chaskar suggests a technique for handover from one network to another, and Hsu suggests the beneficial way of stop listening to broadcasted messages over cellular and start listening to messages over WLAN after such handover to accommodate devices that has only one tuner and (Hsu, page 4, paragraph 59) to improve power saving in the analogous art of wireless discovery/handoff.

Chaskar and Hsu don't teach: CARD information is translated into layer 2 information; wherein no IP control plane signaling is used in the broadcasted translated CARD information and in the transmitted CARD information

Karagiannis from the same or similar fields of endeavor teaches: CARD information is translated into layer 2 information (Karagiannis, page 8, paragraph 88, access router advertisement information is solicited and is piggy-backed onto layer 2 messages); wherein no IP control plane signaling is used in the broadcasted translated CARD information and in the transmitted CARD information (Karagiannis, page 3, paragraph 48, agent advertisements are broadcasted; page 8, paragraph 88, advertisement is transmitted using layer 2 protocol, not IP control plane signaling)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar and Hsu, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and transmit them over layer 2 protocol (Karagiannis,

page 8, paragraph 88) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

32. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaskar, US 2004/0196808 in view of Karagiannis, US 2003/0018810 and further in view of Hsu, US 2004/0176024 and Kankaanpaa, "Candidate Access Router Discovery"

33. **For claim 6.** Chaskar and Karagiannis disclose all the limitations of claim 1, however Chaskar fails to teach: wherein the user terminal is a dual stack UMTS/WLAN terminal connected to an access router of an UMTS network, the method further comprising: expanding a UMTS signaling protocol with the CARD protocol information and inserting in said protocol extensions the CARD information that the current access router has gathered from neighbouring access routers by using the CARD protocol.

Karagiannis from the same or similar fields of endeavor teaches: expanding a UMTS signaling protocol with the CARD protocol information and inserting in said protocol extensions the CARD information (Karagiannis, page 8, paragraph 88, access router advertisement information is solicited and is piggy-backed onto layer 2 messages; UMTS signaling protocol is layer 2)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Karagiannis suggests the beneficial way of piggyback such information

into layer 2 messages and transmit them over layer 2 protocol (Karagiannis, page 8, paragraph 88) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

Chaskar and Karagiannis don't teach: wherein the user terminal is a dual stack UMTS/WLAN terminal connected to an access router of an UMTS network

Hsu from the same or similar fields of endeavor teaches: wherein the user terminal is a dual stack UMTS/WLAN terminal connected to an access router of an UMTS network (Hsu, page 2, paragraph 27, user terminal able to tune to both cellular and WLAN networks and is current communicating via cellular network)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Hsu into Chaskar and Karagiannis, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Hsu suggests the beneficial way for such terminal to be able to support both WLAN and cellular to alleviate loading of the cellular system and increase capacity (Hsu, page 1, paragraph 7) in the analogous art of wireless discovery/handoff.

Chaskar, Karagiannis and Hsu don't teach: that the current access router has gathered from neighbouring access routers by using the CARD protocol

Kankaanpaa from the same or similar fields of endeavor teaches: that the current access router has gathered from neighbouring access routers by using the CARD protocol (Kankaanpaa, page 6, paragraph 1, the current access router AR gather capabilities information from other CARs).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kankaanpaa into Chaskar, Karagiannis and Hsu, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Kankaanpaa suggests the beneficial way of having the current access router gathering such capability information (Kankaanpaa, page 6, paragraph 1) improve battery power and processing capabilities of mobile node since the mobile node doesn't have to contact other candidate access routers for gathering in the analogous art of wireless discovery/handoff.

34. **Claim 11** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaskar, US 2004/0196808 in view of Karagiannis, US 2003/0018810 and further in view of Applicant Admitted Prior Art (AAPA).

35. **For claim 11.** Chaskar and Karagiannis teach: A method in accordance with claim 10, however Chaskar and Karagiannis fail to teach: said access router receiving a request from said user terminal for said router capability information over said layer 2 prior to said step of said access router transmitting said layer 2 based router capability information to said user terminal.

AAPA teaches: said access router receiving a request from said user terminal for said router capability information over said layer 2 prior to said step of said access router transmitting said layer 2 based router capability information to said user terminal (AAPA, page 2, lines 24-25, user terminal requests CARD information for a current

access router prior to current access router transmitting CARD information to user terminal. The phrase "receiving a request... over said layer 2" is very broad because applicants are not claiming that the request is layer 2 based, but only stating that the request is received over layer 2. It is well-known in the art that the receiving process goes from the lowest layer / physical layer to the highest layer / application layer, therefore a request is received over layer 2 if it follows the network layer model, which the CARD protocol does. As for such transmission of capability information being layer 2 based, it is taught by Karaginannis as discussed previously).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of AAPA into Chaskar and Karagiannis, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and AAPA suggests the beneficial way of transmitting such information upon receiving a request (AAPA, page 2, lines 24-25) to prevent unnecessary transmission of capability information hence reduce network load in the analogous art of wireless discovery/handoff.

36. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaskar, US 2004/0196808 in view of Kankaanpaa, "Candidate Access Router Discovery" and Karagiannis, US 2003/0018810.

37. **For claim 14.** Chaskar teaches: In a multi access system comprising plural access routers (Chaskar, fig 1, multi access system with access routers AR1, AR2), a

method of selecting a target access router among said plural access routers (Chaskar, page 4, paragraph 39, mobile terminal selects target access router based on capability information), said method comprising:

a user terminal connecting with a current access router using a communication service, said access router being one of said plural access routers (Chaskar, fig 3, user terminal MT connects with current AR1 among AR1, AR2, AR3, AR4);

and said user terminal selecting said target access router for access to said multi access system among said plural access routers based on said router capability information using a target access router selection algorithm (Chaskar, page 4, paragraph 39, user terminal MT selects target access router based on capability information using an selection process that based on signal strength and previously stored capabilities requirements as discussed on page 6, paragraph 53),

Chaskar doesn't teach: said user terminal receiving router capability information transmitted from said current access router over said communication service, said router capability information including capability information of said plural access routers; communication service is layer 2, router capability information is layer 2 based, wherein no IP control plane is used in said layer 2 communication service between said access router and said user terminal

Kankaanpaa from the same or similar fields of endeavor teaches: said user terminal receiving router capability information transmitted from said current access router over said communication service (Kankaanpaa, page 6, paragraph 1, the current access router AR sends capability information to the mobile node MN), said router

capability information including capability information of said plural access routers (Kankaanpaa, page 6, paragraph 1, the current access router AR gather capabilities information from other CARs)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Kankaanpaa into Chaskar, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Kankaanpaa suggests the beneficial way of having the current access router gathering such capability information and doing such transmitting (Kankaanpaa, page 6, paragraph 1) improve battery power and processing capabilities of mobile node since the mobile node doesn't have to contact other candidate access routers for gathering in the analogous art of wireless discovery/handoff.

Chaskar and Kankaanpaa don't teach: communication service is layer 2, router capability information is layer 2 based, wherein no IP control plane is used in said layer 2 communication service between said access router and said user terminal

Karagiannis from the same or similar fields of endeavor teaches: communication service is layer 2 (Karagiannis, page 8, paragraph 88, layer 2 protocol is used between mobile node and agent), router capability information is layer 2 based (Karagiannis, page 8, paragraph 88, agent advertisement information is solicited and is piggy-backed onto layer 2 messages), wherein no IP control plane is used in said layer 2 communication service between said access router and said user terminal (Karagiannis, page 8, paragraph 88, advertisement is transmitted using layer 2 protocol, not IP control plane signaling)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of Karagiannis into Chaskar and Kankaanpaa, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and Karagiannis suggests the beneficial way of piggyback such information into layer 2 messages and transmit them over layer 2 protocol (Karagiannis, page 8, paragraph 88) to ensure compatibility with old wireless network that doesn't support IP messages in the analogous art of wireless discovery/handoff.

38. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over Chaskar, US 2004/0196808 in view of Kankaanpaa, "Candidate Access Router Discovery" and Karagiannis, US 2003/0018810 and further in view of Applicant Admitted Prior Art (AAPA).

39. **For claim 15.** Chaskar, Kankaanpaa, and Karagiannis disclose all the limitations of claim 14, however Chaskar, Kankaanpaa, and Karagiannis fail to teach: said user terminal sending a request to said current access router for said router capability information over said layer 2 prior to said step of said user terminal receiving said layer 2 based router capability information transmitted from said current access router over said layer 2 communication service.

AAPA teaches: said user terminal sending a request to said current access router for said router capability information over said layer 2 prior to said step of said

user terminal receiving said layer 2 based router capability information transmitted from said current access router over said layer 2 communication service (AAPA, page 2, lines 24-25, user terminal requests CARD information for a current access router prior to current access router transmitting CARD information to user terminal. The phrase "receiving a request... over said layer 2" is very broad because applicants are not claiming that the request is layer 2 based, but only stating that the request is received over layer 2. It is well-known in the art that the receiving process goes from the lowest layer / physical layer to the highest layer / application layer, therefore a request is received over layer 2 if it follows the network layer model, which the CARD protocol does. As for such transmission of capability information being layer 2 based, it is taught by Karaginannis as discussed previously)

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the teachings of AAPA into Chaskar, Kankaanpaa and Karagiannis, since Chaskar suggests a technique for transmitting router capability information to a user terminal, and AAPA suggests the beneficial way of transmitting such information upon receiving a request (AAPA, page 2, lines 24-25) to prevent unnecessary transmission of capability information hence reduce network load in the analogous art of wireless discovery/handoff.

Allowable Subject Matter

40. **Claims 7-9** would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 1st paragraph, set forth in this Office action. The prior

art Karagiannis performs the translation process by piggy-backing agent advertisement onto layer 2 message. Therefore, the agent advertisement is present in the layer 2 message. If applicants can provide support for "no IP control plane signaling is present in the layer 2 translated CARD protocol information" from the specification, the prior art would be overcome. Please note this is totally different from the limitation "wherein no IP control plane signaling is used for transmitting the translated CARD information..." which Karagiannis clearly teaches, as detailed in the rejection above.

41. **Claims 16-17** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHOA HUYNH whose telephone number is (571) 270-7185. The examiner can normally be reached on Monday - Friday: 9:00 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, SEEMA RAO can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kevin C. Harper/
Primary Examiner, Art Unit 2462

/K. H./
Examiner, Art Unit 2462